COVANTA
Powering Today. Protecting Tomorrow.

Covanta Essex Company
183 Raymond Blvd
Newark, NJ 07105
Tel 973 344 0900

January 14, 2020

U.S. Environmental Protection Agency, Region II
Stationary Source Compliance Section
21st Floor
290 Broadway
New York, NY 10007-1806

2020 JAN 17 PM 1:47

Subject: Covanta Essex Company
Essex County Resource Recovery Facility
Program Interest (Title V) Number 07736
July 1 through December 31, 2019 Semiannual Report and
January 1 through December 31, 2019 Annual Report

To Whom It May Concern:

Pursuant to **40 CFR 60.59b(g)**, Covanta Essex Company is submitting an annual report that covers calendar year 2019. Compliance and performance testing was conducted in April - May 2019 for Units 1, 2 and 3. The final stack test report was submitted to NJDEP on June 28, 2019. The test report established compliance with emission limits in accordance with **40 CFR 62, Subpart FFF.** Concurrent with testing, baseline levels were established for MWC unit load, Baghouse inlet temperature, and carbon feed rate.

Pursuant to **40 CFR 60.59b(h)**, Covanta Essex Company is also submitting a semiannual report that covers the period July 1 through December 31, 2019. There was no compliance and performance testing conducted during this reporting period.

This semiannual report format includes information related to sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, and opacity. The attached report provides the pertinent citations and an explanation of each condition.

Please note that the manual carbon calibrations are not being reported as non-compliance with the carbon feed rate stipulated in **40 CFR 60.58b(m)(2).** By PSD permit modification dated November 18, 1998, these manual calibrations of the carbon system are mandated by the NJDEP to be conducted on a quarterly basis.

I trust this submittal meets the requirement of annual reporting as detailed in **40 CFR 60.59b(g),** and semiannual reporting as detailed in **40 CFR 60.59b(h)**. If you have any questions, feel free to call me at (973) 817-7322.

Sincerely,

Patricia Earls
New Jersey Regional Environmental Manager

cc: J. Meyer (NJDEP)
M. Miles (ICC)
R. King (Port Authority NY & NJ)
W. Glynn (Port Authority NY & NJ)
K. Thomas (City Of Newark)
E. Herrmann (ECUA)
N. Grieco (ECUA)
J. DiVincenzo (Essex County)

WORD\ENVIRON\L-2400\eh

Covanta Essex Company
Essex County Resource Recovery Facility

Semi-Annual Report for July 1, 2019 through December 31, 2019

And

Annual Report for Calendar Year 2019

Title V Permit Program Interest Number 07736

January 14, 2020

List of Tables

Section I – Semi-Annual Report

Section II – Annual Report Components

Section I: Semi -Annual Report
Covanta Essex Company
July to December 2019

This section contains the applicable Federal reporting requirements listed in 40 CFR 60.59b paragraph (h) of Subpart Eb as referenced by 40 CFR 60.39b of Subpart Cb for the reporting period of July 1 through December 31, 2019. Additionally, this section contains applicable requirements under 40 CFR Part 60 Appendix B and Appendix F.

a) Applicable Regulation 60.59b(h)(1)

The summary of excess emissions as required in 60.59b(h)(1), includes the identification of the calendar dates when any of the average emission concentrations, percent reductions or operating parameters were above applicable limits, reasons for such exceedances and a description of corrective actions taken. This information is included in Table 1 (for SO_2, NO_x, CO, MWC Unit Load Level, Particulate Matter Control Device Inlet Temperature and Opacity).

Table 1: Emission or Parameter Levels That Did Not Achieve Applicable Emission or Parameter Limits

Date	Pollutant/ Parameter (Averaging Period)	Unit #	Exceedance/ Limit	Reason	Corrective Action
8/7/19	Opacity (6 Minute Block)	3	11%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
8/7/19	Opacity (6 Minute Block)	3	12%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
8/7/19	Opacity (6 Minute Block)	3	12%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste

Date	Pollutant/ Parameter (Averaging Period)	Unit #	Exceedance/ Limit	Reason	Corrective Action
8/7/19	Opacity (6 Minute Block)	3	11%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
9/20/19	Opacity (6 Minute Block)	3	12%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
9/20/19	Opacity (6 Minute Block)	3	11%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
10/10/19	Opacity (6 Minute Block)	1	33%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
10/10/19	Opacity (6 Minute Block)	1	31%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste

Date	Pollutant/ Parameter (Averaging Period)	Unit #	Exceedance/ Limit	Reason	Corrective Action
10/10/19	Opacity (6 Minute Block)	1	29%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
10/10/19	Opacity (6 Minute Block)	1	24%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
10/10/19	Opacity (6 Minute Block)	1	19%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste
10/10/19	Opacity (6 Minute Block)	1	12%/10%	Tinted opacity plume was caused by a substance in the MSW that was combusted.	Increase inspections and mixing of waste and alert customers not to dispose of iodine in waste

b) Applicable Regulation 60.59b(h)(2)
The CEM data corresponding to the reported excess emissions may be found as Attachment 1.

c) Applicable Regulation 60.59b(h)(3)
There were no performance stack test events during the reporting period where emissions recorded were above the applicable pollutant limits.

d) Applicable Regulation 60.59b(h)(4) and (h)(5)
There were no events from July 1, through December 31, 2019.

e) Applicable Regulation 60.59b(h)(4) and (h)(5)
For each operating date on which the carbon mass feed rate was below that specified during performance tests, the average carbon mass feed rate (in pounds per hour) has been estimated for each hour of operation as required under 60.58b(m)(3)(ii). These averages, including reasons for such occurrences and a description of corrective actions taken are presented in Table 2.

Table 2: Carbon Feed Rate Data July – December 2019

40 CFR 60.58b(m) Requirement	**Unit #1**	**Unit #2**	**Unit #3**
Minimum carbon feed rate as determined by optimization testing	34 lbs/hr	34 lbs/hr	34 lbs/hr
Total boiler operating hours per unit	4145	4322	4414
Required optimized quantity of carbon for all units	12,881 hrs X 34 lbs/hr = 437,954 lbs		
Carbon used (based on delivery and silo inventory)	471,004 lbs		

f) Applicable Regulation 40 CFR 62.14105 – Periods of time where the certified individuals are off-site for more than 12 hours.

None.

Section II 2019 - Annual Report Components

This section contains the applicable Federal reporting requirements listed in 40 CFR 60.59b paragraph (g) of Subpart Eb as referenced by 40 CFR 60.39b of Subpart Cb for the reporting period January 1, 2019 through December 31, 2019.

a) Applicable Regulation: 40 CFR 60.59b (g)(1)(i)

The summaries of Performance Test Results for the most recent test are provided in Table 1.

Table 1: 2019 Subpart Cb Compliance Test Results (average of three test runs)

Pollutant/Parameter	Unit 1	Unit 2	Unit 3
Particulate Matter (mg/dscm @ 7% O_2)	2.95	2.15	2.98
Opacity (%)	0	0	1
Cadmium (ug/dscm @ 7% O_2)	0.296	0.260	0.353
Lead (ug/dscm @ 7% O_2)	1.46	1.50	1.98
Mercury (ug/dscm @ 7% O_2)	<1.20	<1.32	<1.24
PCDD/PCDF Dioxin/Furan (ng/dscm @ 7% O_2)(1)	0.486	NA	NA
Hydrogen Chloride (ppmdv @ 7% O_2)	3.95	3.63	2.52
Fugitive Ash emissions (minutes of observation period)	0	0	0

1) In accordance with dioxin/furan testing requirements specified in MACT, the facility requested alternate/reduced testing and in March 2004 tested only Unit 1. The facility remains in compliance with alternate/reduced testing schedule requirements and tested Unit 1 in May 2019.

b) Applicable Regulation 60.59b(g)(1)(ii)

A list of the highest emission levels recorded for each unit for the reporting period is provided in Table 2.

c) Applicable Regulation 60.59b(g)(1)(iii)

A list of the highest opacity level measured for each unit during the reporting period is also provided in Table 2.

Table 2: Highest Emission Level Recorded During Calendar Year 2019*

Pollutant/Parameter (Averaging Period)	Unit 1	Unit 2	Unit 3
Opacity (%) (6-minute average)	38%	50%	39%
SO_2 (ppm @ 7% O_2) (24-hour geometric average)	16.3	22.0	13.2
NO_x (ppm @ 7% O_2) (24-hour daily average)	115.8	121.6	114.5
CO (ppm @ 7% O_2) (4-hour block average)	90	92	137
MWC Unit Load Level (klbs/hour) (4-hour block average)	247.0	247.0	247.0
Particulate Matter Control Device Inlet Temperature (^{0}F) (4-hour block average)	342	340	339

* Highest emission levels recorded by the CEMS while unit is on-line combusting refuse, i.e., do not include periods of off-line data blowup, etc.

d) Applicable Regulation 60.59b(g)(1)(iv)

The minimum data capture requirement for CEMS is to obtain valid hourly averages for 90% of the operating hours per calendar quarter and 95% of the operating hours per calendar year. The total number of hours per quarter that valid hourly averages were not obtained is provided in Table 3a. The percent of quarterly and annual operating hours that valid hourly averages were not obtained is provided in Table 3b.

Table 3a: Total Hours Per Calendar Quarter That a Valid Hourly Average Was Not Obtained by CEMS*

Pollutant/Parameter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Unit 1				
Outlet SO_2 (ppm @ 7% O_2)	10	17	33	101
NO_x (ppm @ 7% O_2)	10	17	7	17
CO (ppm @ 7% O_2)	10	17	7	17
MWC Unit Load Level (klbs/hour)	1	0	0	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	1	0	0	0
Unit 2				
Outlet SO_2 (ppm @ 7% O_2)	16	6	11	55
NO_x (ppm @ 7% O_2)	16	6	11	26
CO (ppm @ 7% O_2)	16	6	11	26
MWC Unit Load Level (klbs/hour)	2	0	0	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	2	0	0	0
Unit 3				
Outlet SO_2 (ppm @ 7% O_2)	44	6	7	20
NO_x (ppm @ 7% O_2)	22	6	7	20
CO (ppm @ 7% O_2)	22	6	7	54
MWC Unit Load Level (klbs/hour)	1	0	0	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	1	0	0	0

* Data capture based on the number of hours the unit is on-line combusting refuse.

Table 3b: Percent of Quarterly and Annual Operating Hours That Valid Hourly Averages Were Not Obtained by CEMS*

Pollutant/Parameter	% of Operating Hours Valid Data Not Obtained				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
Unit 1					
Total Operating Hours	**2119**	**2175**	**1937**	**2208**	**8439**
Outlet SO_2 (ppm @ 7% O_2)	0.47%	0.78%	1.70%	4.57%	1.91%
NO_x (ppm @ 7% O_2)	0.47%	0.78%	0.36%	0.77%	0.60%
CO (ppm @ 7% O_2)	0.47%	0.78%	0.36%	0.77%	0.60%
MWC Unit Load Level (klbs/hour)	0.05%	0.0%	0.0%	0.0%	0.01%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.05%	0.0%	0.0%	0.0%	0.01%
Unit 2					
Total Operating Hours	**1896**	**2139**	**2164**	**2158**	**8357**
Outlet SO_2 (ppm @ 7% O_2)	0.84%	0.28%	0.51%	2.55%	1.05%
NO_x (ppm @ 7% O_2)	0.84%	0.28%	0.51%	1.21%	0.71%
CO (ppm @ 7% O_2)	0.84%	0.28%	0.51%	1.21%	0.71%
MWC Unit Load Level (klbs/hour)	0.11%	0.0%	0.0%	0.0%	0.02%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.11%	0.0%	0.0%	0.0%	0.02%
Unit 3					
Total Operating Hours	**1896**	**2124**	**2206**	**2208**	**8434**
Outlet SO_2 (ppm @ 7% O_2)	2.32%	0.28%	0.32%	0.91%	0.91%
NO_x (ppm @ 7% O_2)	1.16%	0.28%	0.32%	0.91%	0.65%
CO (ppm @ 7% O_2)	1.16%	0.28%	0.32%	2.45%	1.06%
MWC Unit Load Level (klbs/hour)	0.05%	0.0%	0.0%	0.0%	0.01%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.05%	0.0%	0.0%	0.0%	0.01%

* Percent data capture based on the number of hours the unit is on-line combusting refuse.

e) Applicable Regulation 60.59b(g)(1)(v)

The total number of hours of valid data for the applicable pollutants that was excluded from the calculations may be found in Table 4.

Table 4: Total Number of Hours Data was Excluded*

Pollutant/Parameter	Unit 1	Unit 2	Unit 3
Outlet SO_2 (ppm @ 7% O_2)	0	0	0
NO_x (ppm @ 7% O_2)	0	0	0
CO (ppm @ 7% O_2)	0	0	0
MWC Unit Load Level (klbs/hour)	0	0	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	0	0	0

* Total hours of valid data excluded from averaging periods while unit was on-line combusting refuse because they occurred during start up or shut down exemption periods.

f) Applicable Regulation 60.59b(g)(3)

The listing of emission or parameter levels that did not achieve emission or parameter limits specified in the applicable subpart is found in Table 5.

Table 5: Emission or Parameter Levels That Did Not Achieve Applicable Emission or Parameter Limits for 2019

Pollutant/Parameter (Averaging Period)	Unit 1	Unit 2	Unit 3
Opacity (10%) (6-minute average)	11	43	40
SO_2 (29 ppm @ 7% O_2) (24-hour geometric average)	0	0	0
NO_x (155 ppm @ 7% O_2) (24-hour daily average)	0	0	0
CO (100 ppm @ 7% O_2) (4-hour block average)	0	0	3
MWC Unit Load Level (247.5 klbs/hour) (4-hour block average)	0	0	0
Particulate Matter Control Device Inlet Temperature (Units 1,2,3) (342.4F,343.2F, 358.0F) (4-hour-block average)	0	0	0

g) Applicable Regulation 60.59b(g)(2)

In order to provide the Administrator with a summary of performance of the affected facility over a two-year period, a summary of data has also been prepared for the preceding calendar year of 2018. This includes applicable stack test results for the Test conducted in May and July 2018 (Table A), highest emission level recorded during the calendar year 2018 (Table B), total number of hours per quarter that valid hourly averages were not obtained (Table C1), the percent of quarterly and annual operating hours that valid hourly averages were not obtained (Table C2), and the total number of hours data was excluded for 2018 (Table D).

Table A: 2018 Subpart Cb Compliance Test Results
(average of three test runs)

Pollutant/Parameter	Unit 1	Unit 2	Unit 3
Particulate Matter (mg/dscm @ 7% O_2)	0.969	5.56	1.69
Opacity (%)	1.0	1.0	0.0
Cadmium (ug/dscm @ 7% O_2)	<0.127	1.05	<0.164
Lead (ug/dscm @ 7% O_2)	1.01	9.89	2.34
Mercury (ug/dscm @ 7% O_2)	<1.21	<0.887	<1.14
PCDD/PCDF Dioxin/Furan (ng/dscm @ 7% O_2)[1]	NA	NA	0.359
Hydrogen Chloride (ppmdv @ 7% O_2)	0.617	4.55	8.03
Fugitive Ash emissions (minutes of observation period)	0	0	0

1) In accordance with dioxin/furan testing requirements specified in MACT, the facility requested alternate/reduced testing and in March 2004 tested only Unit 1. The facility remains in compliance with alternate/reduced testing schedule requirements and tested Unit 3 in July 2018.

Table B: Highest Emission Level Recorded During Calendar Year 2018*

Pollutant/Parameter (Averaging Period)	Unit 1	Unit 2	Unit 3
Opacity (%) (6-minute average)	26%	11%	18%
SO_2 (ppm @ 7% O_2) (24-hour geometric average)	17.2	21.9	18.1
NO_x (ppm @ 7% O_2) (24-hour daily average)	115.2	113.4	138.8
CO (ppm @ 7% O_2) (4-hour block average)	102	96	138
MWC Unit Load Level (klbs/hour) (4-hour block average)	247	246	247
Particulate Matter Control Device Inlet Temperature (^{0}F) (4-hour block average)	341	341	342

* Highest emission levels recorded by the CEMS while unit is on-line combusting refuse, i.e., does not include periods of off-line data blowup, etc.

Table C1: Total Hours Per Calendar Quarter That a Valid Hourly Average Was Not Obtained by CEMS in 2018*

Pollutant/Parameter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Unit 1				
Outlet SO_2 (ppm @ 7% O_2)	10	7	56	33
NO_x (ppm @ 7% O_2)	10	7	12	17
CO (ppm @ 7% O_2)	10	7	12	17
MWC Unit Load Level (klbs/hour)	1	17	5	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	1	17	5	0
Unit 2				
Outlet SO_2 (ppm @ 7% O_2)	12	6	6	9
NO_x (ppm @ 7% O_2)	12	6	6	9
CO (ppm @ 7% O_2)	12	6	6	9
MWC Unit Load Level (klbs/hour)	1	5	5	1
Particulate Matter Control Device Inlet Temperature (^{0}F)	1	5	5	1
Unit 3				
Outlet SO_2 (ppm @ 7% O_2)	12	7	23	16
NO_x (ppm @ 7% O_2)	12	7	23	16
CO (ppm @ 7% O_2)	12	7	23	16
MWC Unit Load Level (klbs/hour)	1	5	5	1
Particulate Matter Control Device Inlet Temperature (^{0}F)	1	5	5	1

* Data capture based on the number of hours the unit is on-line combusting refuse.

Table C2: Percent of 2018 Quarterly and Annual Operating Hours That Valid Hourly Averages Were Not Obtained by CEMS*

Pollutant/Parameter	% of Operating Hours Valid Data Not Obtained				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Annual
Unit 1					
Total Operating Hours	**2122**	**2109**	**1947**	**2173**	**8351**
Outlet SO_2 (ppm @ 7% O_2)	0.47%	0.33%	2.88%	1.52%	1.27%
NO_x (ppm @ 7% O_2)	0.47%	0.33%	0.62%	0.78%	0.55%
CO (ppm @ 7% O_2)	0.47%	0.33%	0.62%	0.78%	0.55%
MWC Unit Load Level (klbs/hour)	0.05%	0.81%	0.26%	0.0%	0.28%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.05%	0.81%	0.26%	0.0%	0.28%
Unit 2					
Total Operating Hours	**1919**	**2183**	**2208**	**2159**	**8469**
Outlet SO_2 (ppm @ 7% O_2)	0.63%	0.28%	0.27%	0.42%	0.39%
NO_x (ppm @ 7% O_2)	0.63%	0.28%	0.27%	0.42%	0.39%
CO (ppm @ 7% O_2)	0.63%	0.28%	0.27%	0.42%	0.39%
MWC Unit Load Level (klbs/hour)	0.05%	0.23%	0.23%	0.05%	0.14%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.05%	0.23%	0.23%	0.05%	0.14%
Unit 3					
Total Operating Hours	**1903**	**2183**	**2208**	**2208**	**8502**
Outlet SO_2 (ppm @ 7% O_2)	0.63%	0.32%	1.04%	0.72%	0.68%
NO_x (ppm @ 7% O_2)	0.63%	0.32%	1.04%	0.72%	0.68%
CO (ppm @ 7% O_2)	0.63%	0.32%	1.04%	0.72%	0.68%
MWC Unit Load Level (klbs/hour)	0.05%	0.23%	0.23%	0.05%	0.14%
Particulate Matter Control Device Inlet Temperature (^{0}F)	0.05%	0.23%	0.23%	0.05%	0.14%

* Percent data capture based on the number of hours the unit is on-line combusting refuse.

Table D: Total Number of Hours Data was Excluded for Calendar Year 2018*

Pollutant/Parameter	Unit 1	Unit 2	Unit 3
Outlet SO_2 (ppm @ 7% O_2)	0	0	0
NO_x (ppm @ 7% O_2)	0	0	0
CO (ppm @ 7% O_2)	0	0	0
MWC Unit Load Level (klbs/hour)	0	0	0
Particulate Matter Control Device Inlet Temperature (^{0}F)	0	0	0

* Total hours of valid data excluded from averaging periods while unit was on-line combusting refuse because they occurred during start up or shut down exemption periods.

g) Applicable Regulation 60.59b(g)(4)

As per previous reports, alternate/reduced dioxin/furan testing was requested by the facility and in March 2004 the facility tested only Unit 1. Since the facility is in compliance with the alternate/reduced dioxin/furan performance testing schedule requirements, the facility will remain on reduce/alternate dioxin/furan testing. Unit 2 was tested in August 2017, Unit 3 was tested in July 2018, and Unit 1 was tested in May 2019 under the alternate/reduced testing schedule.

New Jersey Department of Environmental Protection
Certification Statement 2019 Annual Report

Company Name Covanta Essex Company **Facility ID** 07736

1. **Responsible Official** – This first tier of this certification is to be signed by a Responsible Official as defined in N.J.A.C. 7:27-1.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document and, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I certify that, based on my inquiry of those officials immediately responsible for obtaining the information, I believe that any estimates are the result of good faith application of sound professional judgement, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information."

Name (type or print) David Blackmore Title Facility Manager

Signature [signature] Date 1/14/2020

2. **Individuals with direct knowledge** – This second tier of certification is to be signed by the individual or individuals with direct knowledge and/or responsibility for the information contained in the attached spreadsheet. Please use a copy of this form if you need to have this certified by more than two individuals.

"I certify under penalty of law that I believe the information provided in this document is true, accurate, and complete. For those portions of the document that are based on estimates, those estimates are the result of good faith application of sound professional judgement, using techniques, factors, or standards approved by the Department or EPA, or generally accepted in the trade. I am aware that there are significant civil and criminal penalties, including fines or imprisonment or both, for submitting false, inaccurate or incomplete information."

Name (type or print) Patricia Earls Title NJ Reg. Environmental Manager

Signature [signature] Date 1/14/20